MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

FIRST YEAR SECOND SEMESTER EXAMINATIONS

FOR THE DEGREE OF DOCTOR OF PHILOSOPHY
IN
ECONOICS OF EDUCATION

COURSE CODE: EPM914

COURSE TITLE: RETURNS TO INVESTMENT IN EDUCATION

DATE: 28/04/2022   **TIME:** 1400-1700 HOURS

INSTRUCTIONS TO CANDIDATES

ANSWER THREE QUESTIONS

TIME: 3 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 3 Printed Pages. Please Turn Over.

Refer to Tables 1 and 2 and answer either question 1 or 2 or both

Table 1. Kenya National Budget Estimates, 2018-2019 FY

Sector	KES bn
CFS & Net lending (excluding domestic bond redemptions	493.0
Education	444.1
Energy, Infrastructure & ICT	418.8
County Shareable Revenue	314.0
Public Admin & International Relations	270.1
Governance, Justice, Law, and Order (GJLO)	190.4
National Security	142.3
Health Ksh	90.0
Environment Protection, Water & Natural Resources	77.0
Agriculture, Rural & Urban Development	47.1
Social Protection, Culture and Recreation	44.4
Economic and Commercial Affairs	25.4
Total	2,556.6

Note. Source: The National Treasury. (2018). Budget: The "Mwananchi" Guide 2018/19. Nairobi, Kenya: The National Treasury.

Table 2. Contribution to Gross Domestic Product by Activity, 2010-2016

Industry	2010	2011	2012	2013	2014	2015	2016
Agriculture, forestry, and fishing	24.9	26.4	26.2	26.4	27.4	30.4	32.6
Growing of crops	16.7	18.4	18.0	18.4	19.7	23.1	25.9
Animal production	5.7	5.4	5.5	5.3	5.1	4.7	4.4
Support activities to agriculture	0.6	0.6	0.7	0.6	0.6	0.6	0.6
Forestry & logging	1.2	1.3	1.4	1.4	1.3	1.3	1.3
Fishing & aquaculture	0.6	0.6	0.7	0.7	0.7	0.6	0.5
Mining and quarrying	0.8	0.9	1.1	0.9	0.8	0.9	0.8
Manufacturing	11.3	11.7	11.0	10.7	10.0	9.4	9.2
Manufacture of food, beverages and tobacco	4.1	4.5	4.3	4.2	3.8	3.7	3.6
All other manufacturing	7.2	7.3	6.7	6.4	6.1	5.7	5.6
Electricity supply	1.0	1.0	1.1	1.1	1.0	1.4	1.7
Water supply; sewerage, waste management	0.9	0.9	0.9	0.9	0.8	0.7	0.7
Construction	4.5	4.4	4.5	4.5	4.9	4.9	5.0
Wholesale and retail trade, repairs	7.7	8.1	7.8	8.0	8.0	7.6	7.3
Transport and storage	6.8	7.1	8.0	8.0	8.6	8.3	7.9
Accommodation and food service activities	1.6	1.3	1.3	1.2	0.9	0.8	0.7
Information communication technology	2.2	1.6	1.6	1.4	1.2	1	1
Telecommunications	1.3	0.8	0.8	0.7	0.5	0.3	0.4
Publishing, broadcasting, other IT and information activities	0.9	0.9	0.8	0.8	0.7	0.6	0.6
Financial and insurance activities	5.6	5.7	5.9	6.6	6.8	6.8	7.1
Real estate	8.3	8.1	8	7.9	7.7	7.6	7.4
Professional, scientific, and technical activities	1.1	1	1	1	1	0.9	0.8
Administrative and support service activities	1.5	1.3	1.3	1.2	1.1	1	0.9
Public administration and defence	4.4	4.3	4.4	4.4	4.5	4.3	4.1
Education	5.5	5.3	5.4	5.3	5.2	4.9	4.4
Human health and social work activities	2.1	1.8	1.7	1.6	1.7	1.7	1.7
Arts, entertainment, and recreation	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Other service activities	0.7	0.6	0.6	0.6	0.6	0.6	0.6
Activities of households as employers	0.6	0.6	0.6	0.5	0.5	0.5	0.5
Less: Financial services indirectly measured	-2.3	-2.4	-2.6	-2.6	-2.5	-2.6	-2.8
All industries at basic prices	89.2	89.9	89.9	89.9	90.4	91.2	91.6
Taxes less subsidies on products	10.8	10.1	10.1	10.1	9.6	8.8	8.4
GDP at market prices	100	100	100	100	100	100	100

Note. Source: Kenya National Bureau of Statistics. (2017). Statistical Abstract 2017. Nairobi, Kenya: Kenya National Bureau of Statistics.

QUESTION 1

Determine the Mean ($\bar{x}$) for each of Tables 1 and 2 and relate this to their respective figure for Education **(20 marks)**

QUESTION 2

A cursory look at the budgetary allocation to education in Table 1 and its contribution to Gross Domestic Product in Table 2 suggests an irrational allocation. What is your comment as an Education Economist? **(20 marks)**

QUESTION 3

a) Determine the Return on Investment in undergraduate degree book learning vis a vis online learning. Consider that:
   a. The cost of books is KES40,000 while the online course is KES573,000 over four years
   b. Kenya's inflation rate is 8% in 2021
   c. There is a pay rise of KES60,000 per year for 35 years
   d. There is Opportunity Cost   **(12 marks)**

b) What is your advice to a prospective undergraduate student based on your Return on Investment calculations?   **(8 marks)**

QUESTION 4

Discuss the criticism against the publications of George Psacharopoulos & Harry Anthony Patrinos in determining private and social returns to investment in education over the last five decades   **(20 marks)**